HDSL

HDSL HIGH SPEED MODEM

PWR LINK1 LINK2 V35/G703 MST/SLV LOOP ALM LOC ALM REM

User's Guide
rev. 1.0 05/2000

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DECLARATION CE OF CONFORMITY

Digicom S.p.A. via Alessandro Volta 39 21010 Cardano al Campo -Varese-
declares that this product satisfies the basic requirements of
Electromagnetic Compatibility and Safety of the below indicated Directive:

- **89/336/CEE** of 3 may 1989 with subsequent modifications (Directive 92/31/CEE of april 28, 1992, Directive 93/68/CEE of July 22,1993 and Directive 93/97/CEE of 29 october 1993).
- **73/23/CEE** of february 19, 1973 with subsequent modifications (Directive 93/68 ECC of july 22, 1993).

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INTRODUCTION

Digicom's HDSL modems uses the HDSL technology (High-bit-rate Digital Subscriber Line) that allows very high transfer speeds (2 Mbps) over leased lines. It is possible to connect Digicom's HDSL modems either over 2 wires and 4 wires lines. The main requirement for a HDSL Lines is the wire metal continuity.

PREFACE

The following installation rules should be respected in order to have the best working order of the equipment and for the user's safety.

Rapid changes of temperature or humidity should be avoided (0,03°C/min).
This equipment, including cables, should be installed in an area free from:
- Dust, humidity, heat from direct sun light.
- Objects which irradiate heat. These could cause damage to the container or other problems.
- Objects which produce a strong electtromagnetic field (loudspeakers, etc.)
- Liquids or chemical corrosive substances.

To avoid electric shock, the equipment should never be opened. Ask qualified personnel help.
Disconnect the power cable from the wall outlet when the equipment is not to be used for a long period. To disconnect the cable pull it by the plug, never pull it by the cable itself.
If there should be liquid or object penetration in the equipment, disconnect the power cable and call a qualified personl for testing.

CLEANING THE TERMINAL

Use a clean and soft cloth. Wet the cloth with water or natural detergent if it is necessary to remove any stains. Never use chemical products such as petrol or solvents.

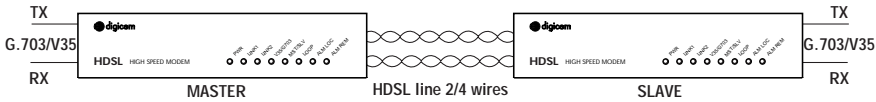### VIBRATIONS OR DROPPING

Caution against vibrations and dropping.

WARNING
This is a class A product.
In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
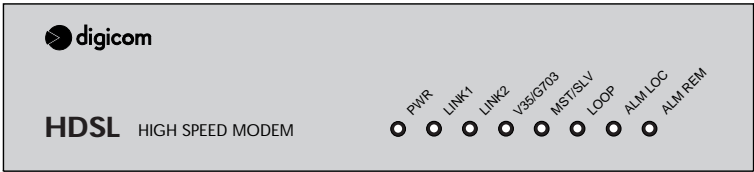
1. GENERAL

1.1. DESCRIPTION

Picture 1

The connection is carried out using 2 HDSL devices: one placed in the main centre (Master) and the other one in the remote place (Slave). The Master and Slave devices have different configurations but are equal as for the electric or mechanic features.
All the digicom's HDSL modems are supplied with the following factory configuration:

- Master
- V.35 selected interface
- Two wires connection
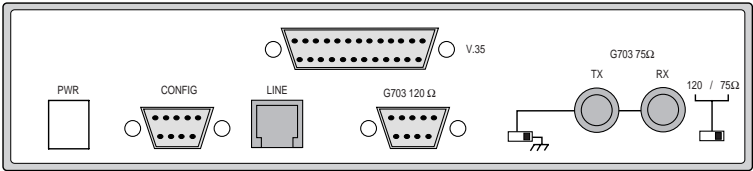- 256 Kbit/s line speed
- Internal clock

1.2. FRONT PANEL VIEW

Picture 2

| Name	Color	Condition	Function
PWR	Green	Off	No power supply
LINK1	Red	On	Channel 1 Status: Connected with the remote one
		Flashing	Channel 1 Status: Searching
LINK2	Red	On	Channel 2 Status: Connected with the remote one
		Flashing	Channel 2 Status: Searching
		Off	Channel 2 Status: disabled
V35/G703	Red	On	V.35 interface selection
		Off	G.703 interface selection
MST/SLV	Red	On	Device configured as Master
		Off	Device configured as Slave
LOOP	Red	On	Local Loop enabled
		Flashing	Loop enabled on the remote device
ALM LOC	Red	On	Problem with G.703 interface
		Flashing	Fault on the local device
ALM REM	Red	On	Problem with the G.703 remote interface (managed on Master device only)
		Flashing	Fault on the remote device

1.3. REAR PANEL VIEW

Picture 3

Name	Function
PWR	Power supply
CONFIG	9pin female connector for device configuration
LINE	HDSL line connector RJ11 4 contacts
G.703 120 ohm	G.703 interface 120 ohm 9 pin female connector
120/75 ohm switch	G.703 interface setup at 120 ohm or 75 ohm
G.703 75 ohm TX	G.703 interface 75 ohm coaxial BNC (send)
G.703 75 ohm RX	G.703 interface 75 ohm coaxial BNC (receive)
G.703 75 ohm switch	Join the shield of coaxial connectors G.703 75 ohm
V.35	V.35 interface, 25 pin female connector

1.3.1. *LINE CONNECTOR PIN*

PIN	Signal
3 and 4	HDSL Line 1
1 and 2	HDSL Line 2

1.3.2. *G.703 120 OHM CONNECTOR PIN*

PIN	Signal
1 and 2	Receive
4 and 5	Send
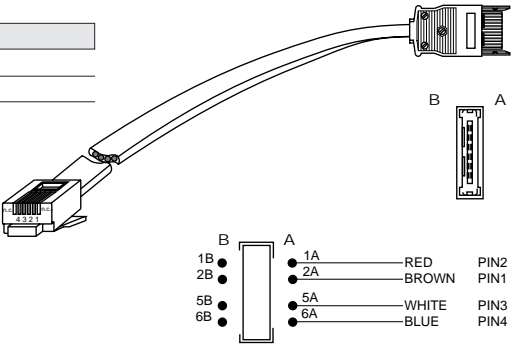
2. INSTALLATION

- Remove the two HDSL modems from the package and check they are OK.
- Using the "SetHDSL" program, configure one of the two modems as Slave.
- Connect the HDSL lines between the modems (RJ11 connector).
- Power on the modems that will connect using the factory configuration (default):
  - **V.35 selected interface**
  - **two wires connection**
  - **256 Kbit/s line speed**

- At this point from the Master place and using the "SetHDSL" program, it is possible to modify the system configuration to set the desired parameters.
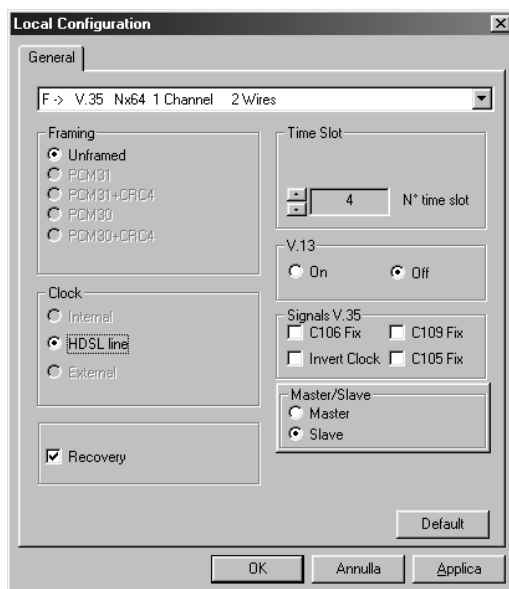
2.1. CONFIGURATIONS DESCRIPTION

To configurate the Digicom's HDSL modems it is necessary to use the Digicom "SetHDSL" program.

The user can choose among seven base configurations (A-G) depending on the interface, the wires of the line and the line speed.

Case	Interface	Flow	Wires	Interface/line speed
A	G703	E1	4	Interface speed fixed at 2 Mbit/s Speed for each couple of wires 1 Mbit/s
B	G703	E1	2	Interface speed fixed at 2 Mbit/s HDSL line speed 2 Mbit/s
C	G703	Nx64	2	Interface speed Nx64 Kbit/s (from 64 to 2 Mbit/s) HDSL line speed depending on set time slot
D	G703	Nx64	4	Interface speed Nx64 Kbit/s (from 64 to 2 Mbit/s) HDSL line speed depending on set time slot
E	V.35	Nx64	4	Interface speed Nx64 Kbit/s (from 64 to 2 Mbit/s) Speed for each couple of wires 1 Mbit/s
F	V.35	Nx64	2	Interface speed Nx64 Kbit/s (from 64 to 2 Mbit/s) HDSL line speed depending on set time slot
G	V.35	Nx64	4	Interface speed Nx64 Kbit/s (from 64 to 2 Mbit/s) HDSL line speed depending on set time slot

NOTE: "N" is the time slot number (i.e. if time slot is 4, Nx64=256 Kbit/s)

The base configuration (A-G) can be customized by setting the Framing type (G.703), the interface (V.35), the speed (tile slot number), the clock, etc.

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NOTE: For further and complete information on the "SetHDSL", please refer to the program help on line.

Interface speed [Kbit/s]	"N" Time Slot	Line speed for each couple of wire (4 wires) [Kbit/s]	Line speed (2 wires) [Kbit/s]
64	1	272	272
128	2	272	272
192	3	272	272
256	4	272	272
320	5	272	336
384	6	272	400
448	7	272	464
512	8	272	528
576	9	336	592
640	10	336	656
704	11	400	720
768	12	400	784
832	13	464	848
896	14	464	912
960	15	528	976
1024 (1Mbps)	16	528	1040
1088	17	592	1104
1152	18	592	1168
1216	19	656	1232
1280	20	656	1296
1344	21	720	1360
1408	22	720	1424
1472	23	784	1488
1536	24	784	1552
1600	25	848	1616
1664	26	848	1680
1728	27	912	1744
1792	28	912	1808
1856	29	976	1872
1920	30	976	1936
1984	31	1040	2000
2048 (2Mbps)	32	1040	2064

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